

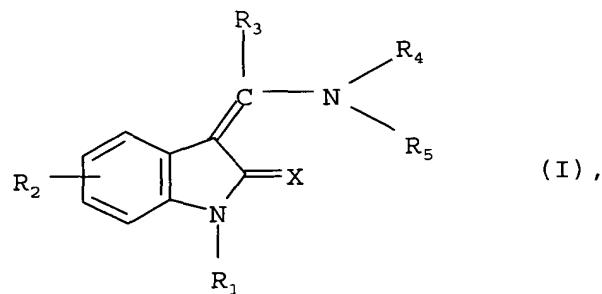
**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1 – 11 (canceled)

Claim 12 (new): A compound of formula



X denotes an oxygen or sulphur atom,

R<sub>1</sub> denotes a hydrogen atom, C<sub>1-3</sub>-alkyl or hydroxy group,

R<sub>2</sub> denotes a hydrogen, fluorine, chlorine, bromine or iodine atom, a C<sub>1-3</sub>-alkyl or nitro group,

R<sub>3</sub> denotes a phenyl or naphthyl group, each of which may be mono- or disubstituted by fluorine, chlorine, bromine or iodine atoms, by C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkoxy, carboxy, cyano, trifluoromethyl, nitro, amino, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, C<sub>1-3</sub>-alkylsulphonylamino, amino-C<sub>1-3</sub>-alkyl, 2-carboxy-phenylcarbonylaminomethyl, C<sub>1-3</sub>-alkylamino-C<sub>1-3</sub>-alkyl, C<sub>2-4</sub>-alkanoylamino-C<sub>1-3</sub>-alkyl, N-(C<sub>2-4</sub>-alkanoyl)-C<sub>1-3</sub>-alkylamino-C<sub>1-3</sub>-alkyl, di-(C<sub>1-3</sub>-alkyl)-amino-C<sub>1-3</sub>-alkyl, carboxy-C<sub>2-3</sub>-alkenyl, N-(carboxy-C<sub>1-3</sub>-alkyl)-aminocarbonyl, N-(carboxy-C<sub>1-3</sub>-alkyl)-N-(C<sub>1-3</sub>-alkyl)-

aminocarbonyl or imidazolyl-C<sub>1-3</sub>-alkyl groups, while the substituents may be identical or different,

R<sub>4</sub> denotes a hydrogen atom or a C<sub>1-3</sub>-alkyl group and

R<sub>5</sub> denotes a phenyl or naphthyl group optionally substituted by a C<sub>1-3</sub>-alkyl group, each of which is additionally substituted in the aromatic moiety

by a fluorine, chlorine, bromine or iodine atom, by a C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkoxy, cyano, nitro or trifluoromethyl group,

by a C<sub>1-3</sub>-alkoxy group which is substituted by a carboxy, aminocarbonyl, C<sub>1-3</sub>-alkylaminocarbonyl or di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group or in the 2 or 3 position by an amino, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, phenyl-C<sub>1-3</sub>-alkylamino, N-(phenyl-C<sub>1-3</sub>-alkyl)-N-(C<sub>1-3</sub>-alkyl)-amino, pyrrolidino, piperidino or hexamethyleneimino group,

by a C<sub>2-3</sub>-alkenyl group optionally substituted by a di-(C<sub>1-3</sub>-alkyl)-amino group, which may additionally be substituted in the alkenyl moiety by a chlorine or bromine atom,

by a C<sub>2-3</sub>-alkynyl group optionally substituted by a di-(C<sub>1-3</sub>-alkyl)-amino group,

by a C<sub>1-3</sub>-alkyl group which is substituted by a 3- to 7-membered cycloalkyleneimino group, by a dehydropiperidino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino, piperazino, N-(C<sub>1-3</sub>-alkyl)-piperazino, N-(C<sub>1-3</sub>-alkanoyl)-piperazino or N-(C<sub>1-5</sub>-alkoxycarbonyl)-piperazino group, whilst the abovementioned substituents may be substituted by a C<sub>1-3</sub>-alkyl, phenyl or phenyl-C<sub>1-3</sub>-alkyl group and the abovementioned piperidino or hexamethyleneimino groups may additionally be substituted by a C<sub>1-3</sub>-alkyl group

or in the 3 or 4 position by a hydroxy, C<sub>1-3</sub>-alkoxy, hydroxy-C<sub>1-3</sub>-alkyl, carboxy, aminocarbonyl, N-(C<sub>1-3</sub>-alkyl)-aminocarbonyl or N,N-di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group,

by a C<sub>1-3</sub>-alkyl group substituted by a hydroxy, C<sub>1-3</sub>-alkoxy, carboxy or cyano group, whilst a C<sub>1-3</sub>-alkyl group substituted by a carboxy group may additionally be substituted in the alkyl moiety by an amino or C<sub>1-5</sub>-alkoxycarbonylamino group,

by an aminocarbonylamino, amidino or guanidino group optionally substituted by one or two C<sub>1-3</sub>-alkyl groups,

by a piperidino, hexamethyleneimino, morpholino, piperazino or N-(C<sub>1-3</sub>-alkyl)-piperazino group,

by a formyl, carboxy or trifluoroacetyl group,

by a carbonyl group which

is substituted by a C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkoxy-C<sub>1-3</sub>-alkyl, amino, C<sub>1-5</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group, while the abovementioned amino and C<sub>1-3</sub>-alkylamino groups may additionally be substituted at the nitrogen atom by a carboxy-C<sub>1-3</sub>-alkyl group or by a C<sub>2-3</sub>-alkyl group which may be substituted in the 2 or 3 position by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group,

by a pyrrolidinocarbonyl, piperidinocarbonyl, hexamethyleneiminocarbonyl, morpholinocarbonyl, piperazinocarbonyl, N-(C<sub>1-3</sub>-alkyl)-piperazinocarbonyl or N-(phenyl-C<sub>1-3</sub>-alkyl)-piperazinocarbonyl group,

by an amidosulphonyl, pyrrolidinosulphonyl, piperidinosulphonyl or hexamethyleneiminosulphonyl group, by a C<sub>1</sub>-3-alkylamidosulphonyl or di-(C<sub>1</sub>-3-alkyl)-amidosulphonyl group, wherein an alkyl moiety may be substituted in each case by a carboxy, aminocarbonyl, N-(C<sub>1</sub>-3-alkyl)-aminocarbonyl or N,N-di-(C<sub>1</sub>-3-alkyl)-aminocarbonyl group or, in the 2 or 3 position, by a C<sub>1</sub>-3-alkylamino or di-(C<sub>1</sub>-3-alkyl)-amino group,

by an amino, C<sub>1</sub>-5-alkylamino, C<sub>3</sub>-7-cycloalkylamino, phenyl-C<sub>1</sub>-3-alkylamino, phenylamino, 6-membered heteroarylamino, amino-C<sub>1</sub>-3-alkyl, N-(C<sub>1</sub>-5-alkyl)-amino-C<sub>1</sub>-3-alkyl, di-(C<sub>1</sub>-5-alkyl)-amino-C<sub>1</sub>-3-alkyl, C<sub>3</sub>-7-cycloalkylamino-C<sub>1</sub>-3-alkyl, N-(C<sub>1</sub>-5-alkyl)-C<sub>3</sub>-7-cycloalkylamino-C<sub>1</sub>-3-alkyl, phenylamino-C<sub>1</sub>-3-alkyl, N-(C<sub>1</sub>-3-alkyl)-phenylamino-C<sub>1</sub>-3-alkyl, phenyl-C<sub>1</sub>-3-alkylamino-C<sub>1</sub>-3-alkyl or N-(C<sub>1</sub>-5-alkyl)-phenyl-C<sub>1</sub>-3-alkylamino-C<sub>1</sub>-3-alkyl group or by a 6-membered heteroarylamino-C<sub>1</sub>-3-alkyl group optionally substituted at the nitrogen atom by a C<sub>1</sub>-5-alkyl group, while the N-alkyl moiety of the abovementioned groups may be substituted in each case by a cyano, carboxy, aminocarbonyl, C<sub>1</sub>-3-alkylaminocarbonyl, di-(C<sub>1</sub>-3-alkyl)-aminocarbonyl, 2-[di-(C<sub>1</sub>-3-alkyl)-amino]-ethylaminocarbonyl, 3-[di-(C<sub>1</sub>-3-alkyl)-amino]-propylaminocarbonyl, N-{2-[di-(C<sub>1</sub>-3-alkyl)-amino]-ethyl}-N-(C<sub>1</sub>-3-alkyl)-aminocarbonyl or N-{3-[di-(C<sub>1</sub>-3-alkyl)-amino]-propyl}-N-(C<sub>1</sub>-3-alkyl)-aminocarbonyl group or in the 2 or 3 position by a hydroxy, C<sub>1</sub>-3-alkoxy, amino, C<sub>1</sub>-3-alkylamino, di-(C<sub>1</sub>-3-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino, morpholino, piperazino or N-(C<sub>1</sub>-3-alkyl)-piperazino group and the nitrogen atom of the abovementioned amino, N-(C<sub>1</sub>-5-alkyl)-amino, C<sub>3</sub>-7-cycloalkylamino, phenyl-C<sub>1</sub>-3-alkylamino, phenylamino, 6-membered heteroarylamino, amino-C<sub>1</sub>-3-alkyl- and N-(C<sub>1</sub>-5-alkylamino)-C<sub>1</sub>-3-alkyl groups may additionally be substituted

by a C<sub>1</sub>-5-alkoxycarbonyl group,

by a formyl, trifluoroacetyl or benzoyl group,

by a carboxy-C<sub>1-3</sub>-alkyl, aminocarbonyl-C<sub>1-3</sub>-alkyl, N-(C<sub>1-3</sub>-alkyl)-aminocarbonyl-C<sub>1-3</sub>-alkyl or N,N-di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl-C<sub>1-3</sub>-alkyl group,

by a C<sub>1-5</sub>-alkyl group which may be substituted, except in the 1 position, by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group,

by a C<sub>2-4</sub>-alkanoyl group which may be substituted in the alkanoyl moiety by a carboxy, hydroxy, C<sub>1-3</sub>-alkoxy, phenyl, amino, phthalimido, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino or morpholino group or by a piperazino group optionally substituted at the nitrogen atom by a C<sub>1-3</sub>-alkyl or phenyl-C<sub>1-3</sub>-alkyl group, while the alkyl moiety of the abovementioned C<sub>1-3</sub>-alkylamino- and di-(C<sub>1-3</sub>-alkyl)-amino substituents may be substituted in the 2 or 3 position by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>1-5</sub>-alkoxycarbonylamino, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, phenyl, pyrrolidino, piperidino, hexamethyleneimino or morpholino group,

by a C<sub>1-5</sub>-alkylsulphonyl group in which the alkyl moiety may be substituted except in the 1 position by a di-(C<sub>1-3</sub>-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino or morpholino group,

by a phenyl-(C<sub>1-3</sub>)-alkylsulphonyl or phenylsulphonyl group optionally substituted in the phenyl moiety by a fluorine, chlorine or bromine atom or by a C<sub>1-3</sub>-alkyl or C<sub>1-3</sub>-alkoxy group,

while additionally any carboxy, amino or imino group present may be substituted by a group which can be cleaved *in vivo*,

the isomers and the salts thereof.

Claim 13 (new): The compound of formula I according to claim 12, wherein

X denotes an oxygen or sulphur atom,

R<sub>1</sub> denotes a hydrogen atom, a C<sub>1-3</sub>-alkyl, hydroxy, C<sub>1-4</sub>-alkoxycarbonyl or C<sub>2-4</sub>-alkanoyl group,

R<sub>2</sub> denotes a hydrogen, fluorine, chlorine, bromine or iodine atom, a C<sub>1-3</sub>-alkyl or nitro group,

R<sub>3</sub> denotes a phenyl or naphthyl group, each of which may be mono- or disubstituted by fluorine, chlorine, bromine or iodine atoms, by C<sub>1-3</sub>-alkyl, imidazolylmethyl, 2-carboxy-ethenyl, 2-(C<sub>1-3</sub>-alkoxycarbonyl)-ethenyl, C<sub>1-3</sub>-alkoxy, cyano, carboxy, C<sub>1-3</sub>-alkoxycarbonyl, trifluoromethyl, nitro, amino, phthalimidomethyl, 2-carboxy-phenylcarbonylaminomethyl, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, C<sub>1-3</sub>-alkylsulphonylamino, amino-C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkylamino-C<sub>1-3</sub>-alkyl, C<sub>2-4</sub>-alkanoyl-amino-C<sub>1-3</sub>-alkyl, N-(C<sub>2-4</sub>-alkanoyl)-C<sub>1-3</sub>-alkylamino-C<sub>1-3</sub>-alkyl, di-(C<sub>1-3</sub>-alkyl)-amino-C<sub>1-3</sub>-alkyl, carboxy-C<sub>1-3</sub>-alkylaminocarbonyl or C<sub>1-3</sub>-alkoxycarbonyl-C<sub>1-3</sub>-alkylaminocarbonyl groups, while the substituents may be identical or different,

R<sub>4</sub> denotes a hydrogen atom or a C<sub>1-3</sub>-alkyl group and

R<sub>5</sub> denotes a phenyl or naphthyl group optionally substituted by a C<sub>1-3</sub>-alkyl group, each of which is additionally substituted in the aromatic moiety

by a fluorine, chlorine, bromine or iodine atom, by a C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkoxy, cyano, nitro or trifluoromethyl group, while the abovementioned alkyl group may simultaneously be substituted by a carboxy or C<sub>1-3</sub>-alkoxycarbonyl group and an amino or C<sub>1-4</sub>-alkoxycarbonylamino group,

a C<sub>1-3</sub>-alkyl group which is substituted by a 4- to 7-membered cycloalkyleneimino group, by a dehydropiperidino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino, piperazino or N-(C<sub>1-4</sub>-alkoxycarbonyl)-piperazino group, while the abovementioned piperidino, hexamethyleneimino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino- and piperazino groups may be substituted by a C<sub>1-3</sub>-alkyl, phenyl or phenyl-C<sub>1-3</sub>-alkyl group and the abovementioned piperidino groups may additionally be substituted by a C<sub>1-3</sub>-alkyl group or in the 3 or 4 position by a hydroxy, C<sub>1-3</sub>-alkoxy, hydroxy-C<sub>1-3</sub>-alkyl, carboxy, aminocarbonyl, N-(C<sub>1-3</sub>-alkyl)-aminocarbonyl or N,N-di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group,

by a C<sub>1-3</sub>-alkyl group optionally substituted by a hydroxy, C<sub>1-3</sub>-alkoxy, carboxy, C<sub>1-3</sub>-alkoxycarbonyl or cyano group,

by an aminocarbonylamino, amidino or guanidino group optionally substituted by one or two C<sub>1-3</sub>-alkyl groups,

by a piperidino, hexamethyleneimino, morpholino, piperazino or N-(C<sub>1-3</sub>-alkyl)-piperazino group,

by a formyl, carboxy, C<sub>1-3</sub>-alkoxycarbonyl or trifluoroacetyl group,

by a carbonyl group which

is substituted by a C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkoxy-C<sub>1-3</sub>-alkyl, amino, C<sub>1-5</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group, while the abovementioned amino- and C<sub>1-3</sub>-alkylamino groups may additionally be substituted at the nitrogen atom by a carboxy-C<sub>1-3</sub>-alkyl or C<sub>1-3</sub>-alkoxycarbonyl-C<sub>1-3</sub>-alkyl group or by a C<sub>2-3</sub>-alkyl group which may be substituted in the 2 or 3 position by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group,

by a pyrrolidinocarbonyl, pyrrolidinosulphonyl, piperidinocarbonyl, hexamethyleneimino carbonyl, morpholinocarbonyl, piperazinocarbonyl, N-(C<sub>1-3</sub>-alkyl)-piperazinocarbonyl or N-(phenyl-C<sub>1-3</sub>-alkyl)-piperazinocarbonyl group,

by an amidosulphonyl, C<sub>1-3</sub>-alkylamidosulphonyl or di-(C<sub>1-3</sub>-alkyl)-amidosulphonyl group, wherein an alkyl moiety may be substituted by a carboxy, C<sub>1-3</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>1-3</sub>-alkylaminocarbonyl or di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group or in the 2 or 3 position may be substituted by an amino, C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group,

by an amino, C<sub>1-5</sub>-alkylamino, amino-C<sub>1-3</sub>-alkyl, N-(C<sub>1-3</sub>-alkyl)-amino-C<sub>1-3</sub>-alkyl, N-(2-hydroxyethyl)-amino-C<sub>1-3</sub>-alkyl, N-(3-hydroxypropyl)-amino-C<sub>1-3</sub>-alkyl, di-(C<sub>1-5</sub>-alkyl)-amino-C<sub>1-3</sub>-alkyl, N-(C<sub>3-7</sub>-cycloalkyl)-amino-C<sub>1-3</sub>-alkyl, N-(C<sub>3-7</sub>-cycloalkyl)-N-(C<sub>1-3</sub>-alkyl)-amino-C<sub>1-3</sub>-alkyl or N-(phenyl-C<sub>1-3</sub>-alkyl)-amino-C<sub>1-3</sub>-alkyl group, while the N-alkyl moiety of the abovementioned groups may be substituted by a cyano, carboxy, C<sub>1-3</sub>-alkylcarbonyl, aminocarbonyl, C<sub>1-3</sub>-alkylaminocarbonyl, di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl, 2-[di-(C<sub>1-3</sub>-alkyl)-amino]-ethylaminocarbonyl, 3-[di-(C<sub>1-3</sub>-alkyl)-amino]-propylaminocarbonyl, N-{2-[di-(C<sub>1-3</sub>-alkyl)-amino]-ethyl}-N-(C<sub>1-3</sub>-alkyl)-aminocarbonyl or N-{3-[di-(C<sub>1-3</sub>-alkyl)-amino]-propyl}-N-(C<sub>1-3</sub>-alkyl)-aminocarbonyl

N-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group or may be substituted in the 2 or 3 position by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino or morpholino group, while the nitrogen atom of the abovementioned amino, C<sub>1-3</sub>-alkylamino, amino-C<sub>1-3</sub>-alkyl or N-(C<sub>1-5</sub>-alkylamino)-C<sub>1-3</sub>-alkyl moieties may additionally be substituted

by a C<sub>1-5</sub>-alkoxycarbonyl group,

by a formyl, trifluoroacetyl or benzoyl group,

by a C<sub>1-5</sub>-alkyl group which may be substituted, except in the 1 position, by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkylamino) group,

by a C<sub>2-4</sub>-alkanoyl group which may be substituted in the alkanoyl moiety by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>2-4</sub>-alkanoylamino, C<sub>1-5</sub>-alkoxycarbonylamino, phthalimido, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, N-(C<sub>1-3</sub>-alkyl)-phenylamino, pyrrolidino, piperidino or morpholino group or by a piperazino group optionally substituted at the nitrogen atom by a C<sub>1-3</sub>-alkyl or phenyl-C<sub>1-3</sub>-alkyl group, while the N-alkyl moiety of the abovementioned groups may be substituted in the 2 or 3 position by a methoxy, di-(C<sub>1-3</sub>-alkyl)-amino or morpholino group,

by a C<sub>1-5</sub>-alkylsulphonyl group in which the alkyl moiety may be substituted, except in the 1 position, by a di-(C<sub>1-3</sub>-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino or morpholino group,

by a pyridinyl or pyrimidinyl group,

by a phenyl, phenyl-(C<sub>1-3</sub>)-alkylsulphonyl or phenylsulphonyl group optionally substituted in the phenyl moiety by a C<sub>1-3</sub>-alkyl group,

by a C<sub>1-3</sub>-alkoxy group which is substituted by a carboxy, C<sub>1-3</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>1-3</sub>-alkylaminocarbonyl or di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group or is substituted in the 2 or 3 position by an amino, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, N-(C<sub>1-3</sub>-alkyl)-N-(phenyl-C<sub>1-3</sub>-alkyl)-amino, piperidino or hexamethyleneimino group,

by a prop-1-enyl, 2-chloro-prop-1-enyl or prop-1-ynyl group which is substituted in the 3 position by a di-(C<sub>1-3</sub>-alkyl)-amino group,

the isomers and the salts thereof.

Claim 14 (new): The compound of formula I according to claim 12, wherein

X denotes an oxygen atom,

R<sub>1</sub> denotes a hydrogen atom, a C<sub>1-3</sub>-alkyl, C<sub>1-4</sub>-alkoxycarbonyl or C<sub>2-4</sub>-alkanoyl group,

R<sub>2</sub> denotes a hydrogen, fluorine, chlorine, bromine or iodine atom, a C<sub>1-3</sub>-alkyl or nitro group,

R<sub>3</sub> denotes a phenyl group which may be mono- or disubstituted by fluorine, chlorine, bromine or iodine atoms, by C<sub>1-3</sub>-alkyl, trifluoromethyl, imidazolylmethyl, 2-carboxyethenyl, 2-C<sub>1-3</sub>-alkoxycarbonyl-ethenyl, C<sub>1-3</sub>-alkoxy, cyano, carboxy, C<sub>1-3</sub>-alkoxycarbonyl, nitro, amino, phthalimidomethyl, 2-carboxybenzoylaminomethyl, C<sub>1-3</sub>-alkylamino, di-(C<sub>1-3</sub>-alkyl)-amino, C<sub>1-3</sub>-alkylsulphonylamino, amino-C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkylamino-C<sub>1-3</sub>-alkyl, C<sub>2-4</sub>-alkanoylamino-C<sub>1-3</sub>-alkyl, N-(C<sub>2-4</sub>-alkanoyl)-C<sub>1-3</sub>-alkylamino-C<sub>1-3</sub>-alkyl, di-(C<sub>1-3</sub>-alkyl)-amino-C<sub>1-3</sub>-alkyl, carboxy-C<sub>1-3</sub>-alkylaminocarbonyl or

C<sub>1-3</sub>-alkoxycarbonyl-C<sub>1-3</sub>-alkylaminocarbonyl groups, while the substituents may be identical or different,

R<sub>4</sub> denotes a hydrogen atom or a C<sub>1-3</sub>-alkyl group and

R<sub>5</sub> denotes a phenyl or naphthyl group optionally substituted by a C<sub>1-3</sub>-alkyl group, each of which is additionally substituted in the aromatic moiety

by a fluorine, chlorine, bromine or iodine atom, by a C<sub>1-3</sub>-alkoxy, cyano, nitro or trifluoromethyl group,

a C<sub>1-3</sub>-alkyl group which is substituted by a 4- to 7-membered cycloalkyleneimino group, by a dehydropiperidino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino, piperazino or N-(C<sub>1-4</sub>-alkoxycarbonyl)-piperazino group, while the abovementioned piperidino, hexamethyleneimino, morpholino and piperazino groups may be substituted by a C<sub>1-3</sub>-alkyl, phenyl or phenyl-C<sub>1-3</sub>-alkyl group and the abovementioned piperidino groups may additionally be substituted by a C<sub>1-3</sub>-alkyl group or may be substituted in the 3 or 4 position by a hydroxy, C<sub>1-3</sub>-alkoxy, hydroxy-C<sub>1-3</sub>-alkyl, carboxy, aminocarbonyl, N-(C<sub>1-3</sub>-alkyl)-aminocarbonyl or N,N-di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group,

by a C<sub>1-3</sub>-alkyl group optionally substituted by a hydroxy, C<sub>1-3</sub>-alkoxy, carboxy, C<sub>1-3</sub>-alkoxycarbonyl or cyano group,

by an aminocarbonylamino, amidino or guanidino group optionally substituted by one or two C<sub>1-3</sub>-alkyl groups,

by a piperidino, hexamethyleneimino, morpholino, piperazino or N-(C<sub>1-3</sub>-alkyl)-piperazino group,

by a formyl, carboxy, C<sub>1-3</sub>-alkoxycarbonyl or trifluoroacetyl group,

by a carbonyl group which

is substituted by a C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkoxy-C<sub>1-3</sub>-alkyl, amino, C<sub>1-5</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group, while the abovementioned amino and C<sub>1-3</sub>-alkylamino groups may additionally be substituted at the nitrogen atom by a carboxy-C<sub>1-3</sub>-alkyl, C<sub>1-3</sub>-alkoxycarbonyl-C<sub>1-3</sub>-alkyl or C<sub>1-3</sub>-alkoxycarbonyl-C<sub>1-3</sub>-alkyl group or by a C<sub>2-3</sub>-alkyl group which may be substituted in the 2 or 3 position by a hydroxy, C<sub>1-3</sub>-alkoxy, amino, C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group,

by a pyrrolidinocarbonyl, pyrrolidinosulphonyl, piperidinocarbonyl or hexamethyleneiminocarbonyl group,

by an amidosulphonyl, C<sub>1-3</sub>-alkylamidosulphonyl or di-(C<sub>1-3</sub>-alkyl)-amidosulphonyl group, wherein an alkyl moiety may be substituted by a carboxy, C<sub>1-3</sub>-alkoxycarbonyl or dimethylaminocarbonyl group or in the 2 or 3 position by a dimethylamino group,

by a straight-chain C<sub>1-2</sub>-alkyl group which is terminally substituted by an amino, benzylamino, pyridylamino or pyrimidylamino group, by a C<sub>1-4</sub>-alkylamino group in which the alkyl moiety may be substituted in position 2, 3 or 4 by a hydroxy or methoxy group, or by a C<sub>1-2</sub>-alkylamino group substituted in the C<sub>1-2</sub>-alkyl moiety by a carboxy, C<sub>1-3</sub>-alkoxycarbonyl or di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group, while in the abovementioned groups any hydrogen atom present at the amino nitrogen atom may additionally be replaced

by a C<sub>3</sub>-6-cycloalkyl group, by a C<sub>1</sub>-4-alkyl group in which the alkyl moiety may be substituted in position 2, 3 or 4 by a hydroxy group, by a C<sub>1</sub>-2-alkylcarbonyl group optionally substituted by a methoxy, carboxy, C<sub>1</sub>-3-alkoxycarbonyl, amino, methylamino, dimethylamino, acetylamino, C<sub>1</sub>-5-alkoxycarbonylamino, N-methyl-C<sub>1</sub>-5-alkoxycarbonylamino or morpholinocarbonylamino group, by a C<sub>1</sub>-5- alkoxy carbonyl, C<sub>1</sub>-4-alkylsulphonyl, phenylsulphonyl or tolylsulphonyl group,

by a 3-dimethylaminopropyl or 3-dimethylamino-prop-1-enyl group,

by an ethyl group which is substituted in the 1 position by an amino or C<sub>1</sub>-5-alkoxycarbonylamino group,

by an ethyl group which is substituted in the 2 position by an amino or C<sub>1</sub>-5-alkoxycarbonylamino group and by a carboxy or C<sub>1</sub>-3-alkoxycarbonyl group,

by an amino or C<sub>1</sub>-3-alkylamino group in which the alkyl moiety may be substituted by a cyano, carboxy, C<sub>1</sub>-3-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or may be substituted in the 2 or 3 position by an amino, methylamino, dimethylamino, acetylamino, N-methyl-acetylamino or morpholino group, by an N-(C<sub>1</sub>-3-alkyl)-aminocarbonyl or N-(C<sub>1</sub>-3-alkyl)-methylaminocarbonyl group optionally substituted in the 2 or 3 position of the C<sub>1</sub>-3-alkyl moiety by a dimethylamino group, while any hydrogen atom present at the amino nitrogen atom in the abovementioned groups may additionally be replaced

by a formyl, trifluoroacetyl, benzoyl, C<sub>1</sub>-4-alkoxycarbonyl or C<sub>1</sub>-4-alkylaminocarbonyl group,

by a C<sub>2</sub>-4-alkanoyl group which may be terminally substituted by an amino, acetylamino, C<sub>1</sub>-4-alkoxycarbonylamino, pyrrolidino, piperidino, morpholino, piperazino, 4-methylpiperazino, 4-benzylpiperazino or phthalimido group or by a C<sub>1</sub>-3-alkylamino, N-acetyl-C<sub>1</sub>-3-alkyl-amino or di-(C<sub>1</sub>-3-alkyl)-amino group, while in the abovementioned C<sub>1</sub>-3-alkylamino, N-acetyl-C<sub>1</sub>-3-alkyl-amino- and di-(C<sub>1</sub>-3-alkyl)-amino groups any C<sub>1</sub>-3-alkyl moiety may additionally be substituted by a phenyl group or in the 2 or 3 position by a methoxy, dimethylamino or morpholino group,

by a C<sub>1</sub>-4-alkylsulphonyl group in which the alkyl moiety may additionally be substituted in the 2 or 3 position by a dimethylamino, piperidino or morpholino group,

by a phenylsulphonyl or toluenesulphonyl group,

by a C<sub>1</sub>-3-alkoxy group which is substituted by a carboxy, C<sub>1</sub>-3-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or is substituted in the 2 or 3 position by an amino, methylamino, dimethylamino, N-methyl-benzylamino, piperidino or hexamethyleneimino group,

by a C<sub>1</sub>-3-alkylaminocarbonyl or di-(C<sub>1</sub>-3-alkyl)-aminocarbonyl group wherein a C<sub>1</sub>-3-alkyl moiety may be substituted in the 2 or 3 position by a methoxy or dimethylamino group,

the isomers and the salts thereof.

Claim 15 (new): The compound of formula I according to claim 12, wherein

X denotes an oxygen atom

R<sub>1</sub> denotes a hydrogen atom,

R<sub>2</sub> denotes a hydrogen, chlorine or bromine atom, a methyl or nitro group,

R<sub>3</sub> denotes a phenyl group which may be substituted by a fluorine, chlorine or bromine atom, by a methyl, methoxy, aminomethyl, acetylaminomethyl, carboxy, methoxycarbonyl or imidazolylmethyl group,

R<sub>4</sub> denotes a hydrogen atom,

R<sub>5</sub> denotes a phenyl group which is substituted

by a fluorine, chlorine or bromine atom, by a methyl, methoxy, nitro, cyano or trifluoromethyl group,

by a methyl or ethyl group, each of which is substituted by a carboxy, C<sub>1-3</sub>-alkoxycarbonyl, cyano, azetidin-1-yl, pyrrolidino, piperidino, 4-phenylpiperidino, 3,6-dihydro-2H-pyridin-1-yl, hexamethyleneimino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, piperazino, 4-methylpiperazino or 4-acetyl piperazino group, while the abovementioned piperidino groups may additionally be substituted by one or two methyl groups or may be substituted in the 3 or 4 position by a hydroxy, methoxy, carboxy, hydroxymethyl, C<sub>1-3</sub>-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group,

by a straight-chain C<sub>1-2</sub>-alkyl group which is terminally substituted by an amino or benzylamino group, by a C<sub>1-4</sub>-alkylamino group in which the alkyl moiety in positions 2, 3 or 4 may be substituted by a hydroxy or methoxy group, by a C<sub>1-2</sub>-alkylamino group substituted in the C<sub>1-2</sub>-alkyl moiety by a carboxy, C<sub>1-3</sub>-alkoxycarbonyl or dimethylaminocarbonyl group, while in the abovementioned groups a hydrogen atom present at the amino nitrogen may additionally be replaced

by a C<sub>3</sub>-6-cycloalkyl group, by a C<sub>1</sub>-4-alkyl group in which the alkyl moiety may be substituted in positions 2, 3 or 4 by a hydroxy group, or by a C<sub>1</sub>-2-alkylcarbonyl group optionally substituted by an amino, methylamino or dimethylamino group,

by a 3-dimethylamino-prop-1-enyl group,

by an ethyl group which is substituted in the 1-position by an amino or C<sub>1</sub>-4-alkoxycarbonylamino group,

by an amino or C<sub>1</sub>-3-alkylamino group in which the alkyl moiety may be terminally substituted by a carboxy, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or in the 2 or 3 position by an amino, methylamino, dimethylamino, acetylamino, N-acetyl-methylamino or morpholino group or by an N-(C<sub>1</sub>-3-alkyl)-aminocarbonyl or N-(C<sub>1</sub>-3-alkyl)-methylaminocarbonyl group optionally substituted in the 2 or 3 position by a dimethylamino group, while a hydrogen atom present at the amino nitrogen in the abovementioned groups may additionally be substituted

by a formyl or benzoyl group,

by a C<sub>2</sub>-4-alkanoyl group which may be terminally substituted by an amino, acetylamino, pyrrolidino, piperidino, morpholino, piperazino or 4-methylpiperazino group or by a C<sub>1</sub>-3-alkylamino, N-acetyl-C<sub>1</sub>-3-alkylamino or di-C<sub>1</sub>-3-alkylamino or di-(C<sub>1</sub>-3-alkyl)-amino group, while in the abovementioned C<sub>1</sub>-3-alkylamino, N-acetyl-C<sub>1</sub>-3-alkylamino or di-(C<sub>1</sub>-3-alkyl)-amino groups a C<sub>1</sub>-3-alkyl moiety may additionally be substituted in the 2 or 3 position by a methoxy, dimethylamino or morpholino group,

by a C<sub>1-4</sub>-alkylsulphonyl group which may be substituted in the 2 or 3 position by a dimethylamino group,

by a pyrrolidinosulphonyl group, an aminosulphonyl, C<sub>1-3</sub>-alkylaminosulphonyl or di-(C<sub>1-3</sub>-alkyl)-aminosulphonyl group, wherein in each case a C<sub>1-3</sub>-alkyl moiety may be substituted by a carboxy, C<sub>1-3</sub>-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or, except in the 1 position, by a dimethylamino group,

by a C<sub>2-3</sub>-alkoxy group which is substituted in the 2 or 3 position by a dimethylamino or piperidino group,

by an aminocarbonyl, C<sub>1-3</sub>-alkylaminocarbonyl or di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group, wherein in each case the C<sub>1-3</sub>-alkyl moieties may be substituted by a methoxy or dimethylamino group, except in the 1 position,

the isomers and the salts thereof.

Claim 16 (new): The compound of formula I according to claim 12, wherein

X and R<sub>2</sub> to R<sub>4</sub> are as hereinbefore defined,

R<sub>1</sub> denotes a hydrogen atom and

R<sub>5</sub> denotes a phenyl group which is substituted

by a methyl or ethyl group, each of which is substituted by an azetidin-1-yl, pyrrolidino, piperidino, hexamethyleneimino, morpholino, 1-oxido-thiomorpholino, piperazino, 4-methylpiperazino or 4-acetyl piperazino group, while the abovementioned piperidino groups may additionally be substituted by one or two methyl groups or in the 4 position may be substituted by a hydroxy, methoxy,

hydroxymethyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group,

by a straight-chain C<sub>1-2</sub>-alkyl group which is terminally substituted by an amino group or by a C<sub>1-3</sub>-alkylamino group, while the alkyl moiety of the C<sub>1-3</sub>-alkylamino group may be substituted in positions 2 or 3 by a hydroxy or methoxy group and in the abovementioned groups the hydrogen atom present at the amino nitrogen may additionally be replaced

by a C<sub>3-6</sub>-cycloalkyl group, by a C<sub>1-3</sub>-alkyl group in which the alkyl moiety in positions 2 or 3 may be substituted by a hydroxy group, or by a C<sub>1-2</sub>-alkylcarbonyl group substituted by an amino, methylamino or dimethylamino group,

by an ethyl group substituted in the 1 position by an amino group,

by an amino or C<sub>1-3</sub>-alkylamino group in which the alkyl moiety may be terminally substituted by a carboxy, aminocarbonyl, methylaminocarbonyl, dimethylaminocarbonyl, N-(2-dimethylamino-ethyl)-aminocarbonyl or N-(2-dimethylamino-ethyl)-N-methyl-aminocarbonyl group or may be substituted in the 2 or 3 position by an amino, methylamino, dimethylamino, acetylamino, N-acetyl-methylamino or morpholino group, while the hydrogen atom present at the amino nitrogen of the abovementioned groups may additionally be replaced

by a C<sub>2-4</sub>-alkanoyl group which may be terminally substituted by an amino, acetylamino, pyrrolidino, piperidino, morpholino, piperazino or 4-methylpiperazino group or by a C<sub>1-3</sub>-alkylamino, N-acetyl-C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino group, while in the abovementioned C<sub>1-3</sub>-alkylamino, N-acetyl-C<sub>1-3</sub>-alkylamino or di-(C<sub>1-3</sub>-alkyl)-amino groups a C<sub>1-3</sub>-alkyl moiety may additionally be

substituted in the 2 or 3 position by a methoxy, dimethylamino or morpholino group,

by a C<sub>1-4</sub>-alkylsulphonyl group which may be substituted in the 2 or 3 position by a dimethylamino group,

by a pyrrolidinosulphonyl group, an aminosulphonyl, C<sub>1-3</sub>-alkylaminosulphonyl or di-(C<sub>1-3</sub>-alkyl)-aminosulphonyl group, wherein in each case a C<sub>1-3</sub>-alkyl moiety may be substituted by a carboxy, methoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or, except in the 1 position, by a dimethylamino group,

by a C<sub>1-3</sub>-alkoxy group substituted in the 2 or 3 position by a dimethylamino or piperidino group,

by an aminocarbonyl, C<sub>1-3</sub>-alkylaminocarbonyl or di-(C<sub>1-3</sub>-alkyl)-aminocarbonyl group, wherein in each case a C<sub>1-3</sub>-alkyl moiety may be substituted by a methoxy or dimethylamino group, except in the 1 position,

the isomers and the salts thereof.

Claim 17 (new): A pharmaceutical composition of matter comprising a compound of formula I as recited in Claim 12 wherein R1 denotes a hydrogen atom, a C<sub>1-3</sub>-alkyl group or a prodrug group or a physiologically acceptable salt thereof, together with one or more inert carriers or dilutents.

Claim 18 (new): A method for protecting proliferating cells in a warm-blooded animal from DNA damage caused by radiation, UV treatment or cytostatic treatment which comprises administering to said animal a therapeutically effective amount of a compound as recited in Claim 12.

Claim 19 (new): A compound selected from the group consisting of:

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- (a) (Z)-3-[1-(4-dimethylaminomethyl-phenylamino)-1-phenyl-methylidene]-5-nitro-2-indolinone,
- (b) (Z)-3-[1-(4-piperidinomethyl-phenylamino)-1-phenyl-methylidene]-5-nitro-2-indolinone,
- (c) (Z)-3-{1-[4-(2-morpholinoethyl)-phenylamino]-1-phenyl-methylidene}-5-nitro-2-indolinone,
- (d) (Z)-3-{1-[4-(2-dimethylamino-ethyl)-phenylamino]-1-phenyl-methylidene}-5-nitro-2-indolinone and
- (e) (Z)-3-{1-[4-(N-(2-dimethylamino-ethyl)-N-methylsulphonyl-amino)-phenylamino]-1-phenyl-methylidene}-2-indolinone;  
or a salt thereof.

Claim 20 (new): The physiologically acceptable salt of a compound as recited in claim 19.

Respectfully submitted,



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